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ABSTRACT

This paper reviews the literature on attachment, presents a study of child-teacher attachment, and discusses child-teacher attachment as a secondary relationship influenced by the prototype bonding between mother and child. The literature review traces the development of psychoanalytic thought regarding the mother-child relationship and examines the function and development of attachment behaviors. The role and biases of the mother and child in initiating, maintaining, and securing attachment are described, and the related development of intentionality in the child is briefly discussed. In the study reported, two boys and two girls ranging in age from 3 to 5 years were observed interacting with their preschool teachers. An instrument developed for this study was used to observe attachment behaviors between children and teachers. Results were interpreted as showing that the children initiated attachment by many different types of behavior, the most dominant indices being talking with the teacher, initiating a conversation, asking a question or requesting help, allowing self to be touched or held, touching, making eye contact, and smiling. In order for these forms of attachment behavior to be directed towards the attachment figure, the children oriented themselves toward the teacher by smiling or using eye contact, and maintained proximity through touch and/or vocalization. The final section of the paper discusses the significance of the infant's first use of each mode of expression as an archetype for attachment behavior in later years. (JMB)

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Attachment: a study of a child's attachment to the teacher as an outgrowth of her/his attachment to the mother

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I. INTRODUCTION

The bonding that develops between mother and infant is a prototype for all later relationships. It is distinguished by interdependence and affect (Bowlby, 1958, 1969; Ainsworth, 1969; Yarrow, 1972). This psychological and social prototype can be at extremes cogent and profound or repelling and shallow, depending on the nature of the relationship. Moreover, it is intrinsically linked with other aspects of development and influences cognitive development (Bowlby, 1969; Yarrow and Pedersen, 1972; Bell, 1970; Littenberg, R., Tulking, S.R. & Kagan J., 1971). Freud and the Venetian psychoanalytic school identified it as an "object relationship;" Gerwitz (1956) and Sears, Whiting, Nowlis & Sears (1963) associated it with the social-learning theory; Benedek, influenced by the Hungarian School, invented the phrase "emotional symbiosis" (1956); more recently Yarrow has called it a "focused relationship" (1972). In 1956 Bowlby and colleagues at Tavistock Clinic and Institute of Human Relations started a significant 13 year study in which the maternal-infant relationship was examined. Bowlby refered to this relationship as "attachment," the term this paper shall use, evolving the concept from the combination of psychoanalytic theory of object relationships with ethology and the control systems theory. He perceives attachment to have both instinctive foundations and genetic characteristics from which the infant initiates and the child cognitively carries out the process (Bowlby, 1969).

Attachment is necessarily dependent upon a relationship between two people, a relationship marked by interaction, reciprocity and strong affect. A continuous process that lasts a lifetime, attachment changes with time in form and meaning. Development in communicative skills (in the broadest of meanings - verbal, physical, spiritual) and conceptual structures underlying those skills obviously are key factors that influence the changes in the dynamics of attachment

bonds. Each individual has predominant ways of expressing involvement and relationship with figures of attachment. These ways originate and are determined by early interactions with the primary attachment figure (Bowlby, 1969), and by the specification of certain needs of that individual and later attachment figures (Bowlby, 1969).

Attachment behavior between caregiver and child has been documented as important in terms of the child's whole development. Studies have been made connecting emotional and cognitive development, and stressing their interdependence (Bowlby, 1969; Yarrow and Pedersen, 1972; Bell, 1970; Littenberg, R., Tulking, S.R. & Kagan, J., 1971). Shapiro & Biber indicate clearly in the Education of Young Children (1972) that a young child's cognitive development is inextricably interwoven with affective behavior. Furth & Wachs and Gessel have strongly indicated that a correlation exists between a child's cognitive and physical development (Furth & Wachs, 1974; Gesell, 1940). Other studies have shown a correlation between an infant and a child's cognitive and social growth with a strong attachment to the mother/caregiver (Bowlby, 1969; Ainsworth & Rubenstein, 1967). That the attachment bond between adult and child or between two children (A. Freud & Dann, 1951) is significant can be concluded from those studies that discuss the interrelatedness of the child's affective, social, physical and cognitive growth. The infant's first sensory input takes place because of the attachment behavior exchanged between infant and mother. Consequently, attachment is the initial catalyst from which the child's development in these four areas can evolve.

As a mother/child attachment influences and facilitates the child's whole development, so also a young child's attachment behavior toward the teacher

has a direct relationship with the child's whole development within the school. This paper will first review the literature written since the 1900's on attachment and then discuss a study of child-teacher attachment as a secondary relationship influenced by the prototype bonding between mother and child. The study grew from the premise that the child-teacher relationship, crucial to the young child's development during school, is determined by the pattern of the primary relationship for both child and adult. The study's purpose is two-fold: to identify and describe the kinds of attachment behavior that occured between the teachers and children observed; and to discuss the implications of the profile established by the study with respect to attachment bonding, attempting, in particular, to determine why some children initiate attachment with the teacher more frequently than other children. In the study the types of involvement of the child and the teacher give a clearer understanding of each other's roles, as well as their relationship as it influences and promotes a positive maturing of the child.

II. REVIEW OF LITERATURE

This section shall attempt to trace the development of psychoanalytic thought with regards to the mother-child relationship from the early 1900's through the sixties. It shall also examine in depth the function and process of attachment behaviors; discuss the role and biases of the mother and child in initiating, maintaining, and making secure attachment; and explore some of the control systems.

"Love has its origin in attachment to the satisfied need for nourishment."[1] This statement by Freud is essentially a summation of the theory of secondary drive espoused by Freud and by his followers of the Viennese School. It is a theory based on assumption rather than observation, and one that received little challenge until Lorenz's studies of the 1930's on imprinting were accepted in the 1950's. The theory of secondary drive needs close examination and discussion. Bettye M. Caldwell[2] summarized Freud's position in the early 1900's and Abraham's position in 1921 in the following way: the need for sucking and biting evolves simultaneously with the need for food, the personality being affected by gratification or frustration of this oral drive. Gratification results in a positive, receptive , and generous personality whereas frustration results in an anxious, insecure, and selfish ego. Yarrow and Pedersen further discuss Freud's analysis.[3] Through gratification or frustration of the oral drive, the infant becomes aware of the external environment.

In discovering that the mother or caretaker is the source of gratification of his physiological needs, the infant differentiates part of his environment. He moves away from primary narcissism when he perceives the mother as a "love object", a prototype of later love relations. Basic trust, Erikson states (1950), originates in orality.[4] According to Bowlby, Freud in Inhibitions, Symptoms, and Anxiety (1926) perceives the basic danger the infant faces is that his psychical equipment may become deranged by too much stimulation resulting from lack of satisfaction of the oral drive. The function of food, therefore, is that it binds the mother to the infant and, consequently, dissipates abundant stimulation. It is this excessive stimulation that concerns psychoanalysts and makes them hesitant, Bowlby feels, to discard the theory of secondary drive.[5] Some theory is necessary for explaining oral symptoms in neurotic and psychotic conditions. Why does a disgraced child, for example, suck his thumb? or a child separated from his mother over eat? or animals reared in isolation from a mother exhibit auto-erotic sucking? The secondary drive theory provides for these Freudian psychoanalysts a partial explanation to these questions. Does it, however, provide an explanation for the origin of love? or the result of attachment deprivation?

"Clinical appreciation of facts seem nearer the truth than ... conventional theorising."[6] Bowlby's statement was

made in response to the discrepancy between observations by psychoanalysts that challenged the secondary drive theory and flat assumptions by the same psychoanalysts that continued support of the theory. Freud in his later writings stated what Bowlby perceives to be a contradictory and radically significant thought:

> ...phylogentic foundation has so much the upper hand over personal accidental experience that it makes no difference whether the child has really sucked at the breast or has been brought up on the bottle and never enjoyed the terderness of a mother's care. In both cases the child's development takes the same path... [7]

Is Freud concluding that component instincts are the basis of the first love relation? The Viennese School, however, was not influenced by these later ideas and continued to espouse the theory of secondary drive. Yet, Bowlby is firm in pointing out clinical observations that contradict the theory. Anna Freud in collaboration with Dorothy Burlingham in 1942 - 1944 produced conclusions to clinical studies that support attachment behavior and essentially reject the secondary drive theory. These conclusions state that the child's need for an early attachment to the mother is "an important instinctual need", [8] that develops fully in the second year of life despite the personal qualities even cruelty of the mother. Morever, in a dynamic study with Sophie Dann (1951) of six children ages 3 and 4 years who had lived together in a concentration camp, Anna Freud observed that "the childten's positive feelings were centered exclusively in their own group." [9] These children had no part in gratifying psysiological needs of one another,

yet had developed a strong attachment towards each other. Despite these findings, Anna Freud continued theoretical support of the secondary drive theory. Therese Benedek, whose initial training was redeived in Budapest, recognized in 1959 an emotional bond between mother and child that she termed "emotional symbiosis".[10] A crying fit, she observed, occursas much from physiological needs as psychological needs. Yet, Benedek too, like Anna Freud, still claimed the infant's dominant need was an oral one.

Both Bowlby and Yarrow and Pedersen discuss the social learning theory that was developed by psychoanalysts who favored the primacy of the secondary drive theory and concluded that social interaction and dependency upon the mother developed as a result of instrumental learning, of relying on another person for one's existence. Again Bowlby acknowledges some important insights made by these psychoanalysts from their clinical studies and observations but thinks they are trapped in the orality theory. Among those who have contributed to and enlarged upon the object-relations theory since Freud, Bowlby regards four British analysists to be the most influential: Melanie Klein; Fairburn; Winnicott; and Balint. Klein (1952), who theorises that all crucial steps in development occur in the first 6 months of life, emphasizes the role of a death instict, of a primary craving of the infant to return to the womb, to the prenatal state of unity with the mother. It is a mental and physical closeness to the gratifying breast (primary object sucking) that can compensate for this lost pre-natal unity with the mother. Fairburn (1941, 1943),

who theorises that the crucial steps in development occur in the first 12 months, uses the primary (autonomous) identification with an object (the mother). He, like Melanie Klein, theorises that an infant's dependence on his mother is oral dependence. In a later study (1956), however, Fairburn discusses ethology and refers to object-seeking behavior that exists at birth. For Winnicott the theory of secondary drive is not a dominant element in the infant's relationship with his mother and the crucial steps thus extend to the first 18 months. In his view point, the mother exists and is sensed in all possible ways. Important in his conception of the child and the development of object relations is Winnicott's theory of "transitional objects" (1953) -- inanimate objects (soft toy, blanket, etc.) that a child is attached to and that become symbols for the breast and mother. Despite his understanding that the breast and food are not central to the technique of mothering, Winnicott does not recognize in any of his studies primary instinctive behavior within infants. Finally the collaborative work of Michael and Alice Balint (1930's) provide the greatest challenge to the Freudian theory of primary narcissism in their position that from the first there is a primitive object relationship in which the infant is an active participant. Moreover, they point out two additional points regarding the child's relationship: it is egoistic but it is independent of the erotogenic zones, that is it is not dependent on orality. Studies of infant apes made by Hermann of the Budapest Society (1933, 1936) noted that early weeks are

spent clinging to their mothers. Furthermore, he observed that human babies exhibit clasping and grasping movements especially when sucking or when feeling threatened. Discovery of the infants instinct to cling certainly influenced the Balints. Their recognition of one important component of instinctual behavior was a significant step forward in examining the mother-child relationship.

It is the instinctual behaviors that are an essential part of attachment, for attachment "integrates psychoanalytic and ethological concepts with a control systems theory."[11] Bowlby, with his roots in the Hungarian School of psychoanalysis and ethologists, is grounded in certain Freudian concepts, especially the object-relations approach. Yet he is also greatly influenced by Konrad Lorenz's theories of imprinting in birds, as well as other imprinting studies conducted with animals. In order to understand what the behaviors and processed of attachment are, it is essential to define attachment and to examine its function in nature, in sub-humans, and in man. Lorenz's work with ducklings and goslings revealed that animals develop attachment behavior to the first moving object they see (a mother, a man, a balloon, a box) without necessarily receiving any conventional reward like food. Imprinting, then is the process of learning the characteristics of the object preferred and followed. And attachment behavior is "seeking and maintaining proximity to another individual."[12] Further studies showed similar discoveries; Cairn's' experiment with lambs revealed that at-

tachment can develop with only visual and auditory exposure to an object. Moreover, Cairns'study with lambs as well as Fischer's with puppies (1963) and Harlow's with monkeys (1960's) demonstrated that these animals develop attachments in spite of receiving punishing treatment from their companion. (Note previously mentionned study of Anna Freud and Dorothy Burlingham.) Harlow also demonstrated in his experiments with monkeys that in times of fear monkeys raised in the company of a non-feeding cloth model sought it out and clung to it whereas monkeys raised in the company of a lactating wire model did not seek the model and remained scared. Even in mammals then, food provides only a minimal part in the development and maintenance of attachment behavior. From these and other studies, Bowlby devised and proposed the theory that the functionof attachment behavior is protection from predators, a hypothesis also proposed by King in the same year (1964).[13] His reasoning is supported by observations of mammals and birds and their attachment behaviors. His first premise states that an isolated animal is more likely to be attacked by a predator than an animal that stays with its kind. Secondly, attachment behavior is especially intense in animals that are particularly vulnerable to predators; that is, the young, the pregnant, the sick, and the old. Thirdly, when a predator is sensed , attachment behavior is always in evidence. And lastly, when a predator is suspected, a dominant male usually threatens a juvenile that approaches the danger. In frightening the juvenile, the dominant male elicits attachment behavior. Thus, paradoxically, the greater the punishment a juvenile receives, the stronger the attachment to the punish-

ing figure.

Attachment behaviors found in sub-human primates resemble to a great extent attachment behaviors in man.[14.] In comparison with animals, attachment behavior takes longer, however, to develop in the human infant because of the relative immaturity of the infant at birth. Clinging in the primates occurs from birth; in the least advanced members (the lemur and the marmoset) the infant receives no support, whereas in the more advanced (the baboon and the rhesus) the mother gives some assistance. The human infant, however, is able to cling only after several months. Moreover, in both man and gorilla, the infant continues to need support of the mother for several months; and, consequently, is kept in close proximity. In sub-human primates, the infant spends a majority of his time with his mother and, when not with her, in the company of juveniles or sometimes with females other than the mother. Though mating is promiscuous, the adult male take a paternal interest in the infant, often adopting it at one or two years of age. Mothers ensure that their infants remain close to them, by giving them support when they are unable to cling without aid, and by pulling them back if they stray. As with human infants, the slower the maturation rate within a particular species, the slower the development for preference of a caretaker. However, once developed, preference is unmistakable and intense, the infant demanding attachment and proximity with the mother. Harlow's studies have shown that exploratory behavior, increased curiosity, and in some species, rebuffing by the mother have contributed at a certain age to diminishing attachment behavior. When alarmed however, even older juveniles

immediately seek out the mother. When is attachment behavior in a human infant initiated? How is it developed? What conditions influence its development?

In a human infant certain instinctual behaviors are activated at birth. Two of these behavioral systems initiate the attachment process and operate as a survival guage: crying and sucking. Others mediate that attachment: smiling, clinging, calling and following. Both behavioral groups function in bringing the mother and child together so that the child can be nutured physically, emotionally and cognitively. In the first year, the infant learns a variety of discriminations and pereceptions that aid him in forming attachment behavior with an individual. An important initial development is the infant's awareness of his separateness from the environment through several kinds of experiences.[15] Through hunger, cold, pain, warmth, he discovers the boundaries of his body. He learns he can affect inanimate objects (banging a wooden spoon produces a noise) as well as people (crying brings his mother). Thus, in the first 6 weeks, the infant increasingly is able to discriminate what he hears, sees, and feels. And in the first 3 months, his body is better able to orient itself to sample the stimulus object through all the senses. Once an infant is able to develop a sense of individuation and a sense that the environment is external to himself, he can learn to discriminate between people and inanimate objects. This he does initially only auditorally; then, after 4 weeks by orienting to the object, tracking with his eyes, grasping and reaching. "The young infant is a stimulus-seeking organism."[16] Humans certainly provide more

variety of sensory imput than objects, contributing signals to the infant's sensory antennae and to his increasing discriminatory awareness. In fact, the human infant "is made so he responds to social-stimuli and engages in social interaction"[17]. Bowlby believes that a child selects an attachment figure by a variety of processes.[18] He states that an infant has a "built-in bias" to observe and discriminate certain stimuli from others. This bias leads the infant to pay attention through his senses to those humans who care for him and thus discriminate that person from all others. The most effectual reinforcement of attachment is the readiness with which the mother responds to the social advances of the infant (whether they be crying, clinging, smiling, or following advances) and the extent to which the mother initiates social interaction with her baby. These two variables are more important to the attachment process, Bowlby believes, than methods of feeding, weaning, toilet-training, sex or birth order of the child, or development quotient.[19] His theory is supported by data from studies made by Ainsworth of children in Ganda and Maryland; studies by Schaffer and Emerson of Scottish children; and studies of children in Israeli kibbutzes. All these studies report that though the two variables are not necessarily associated within a mother, the sensitivity of a mother in responding to her infant and also in initiating and sustaining social interaction secure and intensify attachment. All modes of social interaction and stimulation are important in developing a bond between infant and mother. Tactile, visual, auditory, kinaesthetic and olifactory modes of contact are essential according to studies made by Reinhold(1961), Walters and Parke (1965) and Robson (1967). The more stimulus and exposure the infant's sense organs are

given, the more information the infant receives and the better able he is to perceive and discriminate one individual from other persons and things. Because of the vital role of the mother in providing stimulus and thus stimulating and securing an infants attachment, it is necessary to understand this role and the bias of both the mother and child that will influence the relationship.

Bowlby states that a mother brings to the relationship "a native endowment...a long history of interpersonal relations within her family...and also a long absorption of the values and practices of her culture."[20] Moreover, according to a study conducted by Moss (1967) a mother's behavior toward her unborn child is somewhat predictable. Mothers who, two years before the birth of their baby, had been accepting of a nurturant role, were more responsive toward their infants than mothers who had been lower on the scale. David and Appell (1966, 1969) in their observations of mother-child couples established that a responsive mother enjoyed her child's company whereas an unresponsive mother found it a burden. Yarrow in a study of fourty four foster children (1963) indicated that an infant's capacity to deal with frustration and stress was significantly related to certain characteristics of maternal behavior. These characteristics included[21] "the amount of physical contact a mother gave her infant"; "the frequency and intensity...of positive feelings" expressed by the family and others; and the efficacy of "soothing techniques". Other characteristics were a mother's sensitivity to her infant's "characteristics and rhythms" when holding him; the suitability of materials and experiences to an infant's capacities; and the degree a mother stimulated her in-

fant "to respond socially, to express needs, or to make developmental progress." Ainsworth gives four indices of maternal behavior that she feels ensure a secure attachment.[22.] They are a mother's sensitivity to her infants signals and her timing of intervention; prolonged physical contact with her infant particularly during the first six months as well as effective and soothing holding techniques; an environment in which her infant can sense the consequences of his actions; and, as a result, the mutual enjoyment of mother and child. All these conditions are supported by David and Appell, 1966, 1969; Sander, 1962, 1964; and Bettelheim, 1967 in their clinical observations of infant attachment. Moreover, it is generally established that children, whose mothers were deficient in exhibiting these behaviors and in interacting socially with their infants, have in Bettelheim's view "given up goal-directed action...(and) also prediction".[23.] These children develop little attachment and, in the extreme, can become autistic.

An infant too, as well as a mother, holds certain biases that in turn will influence a mother's behavior and attitude toward him. Yarrow in a study of infants of the same age and sex in foster homes (1963) discovered that active infants receive more social attention than passive ones because they demand it. An apathetic infant, who initiates little and responds weakly to his mother, receives less contact. In contrast an excitable, overreactive, unpredictable infant can create anxiety, exasperation and, as a consequence, rejection within a mother. Boy infants receive more social interaction in the first three months than girl infants because they sleep less and cry more. Thus, it can be seen, the initial biases that mother and child bring to their

relationship affect each other.

Studies by Ainsworth (1964) and Schaffer and Emerson (1964) have shown that an infant may develop several attachment figures though there is a hierarchical order of attachment with the one principal attachment figure usually the natural mother. Moreover, both studies revealed that the more insecure the attachment, the more anxious the child in exploring the world, in developing attachments to other figures, in orientating himself in his mother's absence and in greeting her on her return. In conjunction with these observations is the observation by Ainsworth (1963) that an infant with solid attachment need not necessarily show strong protest behavior or separation anxiety when his mother leaves because he recognizes the secirity of his attachment for her.

An infant, whose mother exhibits a high degree of maternal responsiveness and nuturance, can develop attachment as early as four months. However, the intensity and consistency of attachment varies hour by hour depending on hunger, fatigue, illness, separation, unhappiness, or fear. At first proximity to the mother is maintained by the mother because the infant's own attachment behavior is absent or inefficient. Orientation behavior, previously discussed, is essential in aiding the infant to establish attachement behavior. By six months, an infant is better able to maintain proximity to his mother through signalling behavior of crying, smiling or babbling and some approach behavior. From six months to three years an infant's attachment behavior is strong if somewhat inefficient and approach behavior is in evidence as soon as the child can crawl, walk or run. Piaget (1936) contends that as soon as a baby's cognitive abilities can conceive absent objects and search for them (usually nine months),

a child begins to seek for his mother in familiar places. He is also able to cling to his mother and thus maintain proximity with her. By three years, a child's attachment behavior is fairly efficient and his judgement of whether or not he needs proximity to his mother is improved. Both mother and child now maintain the attachment. Ainsworth has observed several patterns of differentially directed behavior in an infant toward his mother in preference to all other persons. Listed according to the earliest chronological age in which Ainsworth observed these behaviors in infants, they are:[24.]

differential vocalization to mother (study by Wolff)
5 - 6 weeks

differential stopping of crying on being held by mother
9 weeks

differential smiling at visual stimuli of mother
10 weeks to 13 weeks

differential crying on mother's departure
15 weeks

differential visual-postural orientation in which infant, though held by someone else, keeps eyes on mother
18 weeks

differential greeting after absence of mother (includes smiling, vocalizing, body excitment, and later lifting arms, crawling)
21 weeks

differential climbing and exploring of mother's person
22 weeks

differential following mother when she leaves room (younger infants cry and follow)
24 weeks

differential approach by crawling towards mother
28 weeks

differential burying of face on mother
28 weeks

differential use of mother as base from which to make exploratory excursions
28 weeks

differential flight to mother as secure base when alarmed
8 months

differential clinging when infant is alarmed, tired, hungry or unwell
final quarter of first year.

At six weeks, then, an infants behavior is better organized, enabling him to discriminate what he sees, hears, and feels more effectively. At three months a difference in the social behavior of infants reared in families or family type setting and those reared in impersonal institutions is evident. (Ainsworth, 1963, 1967; Provence and Lipton, 1962; Caldwell,1970; Spiro, 1959) And by four, five and six months the infant i s in "a high state of sensitivity for developing attachment behavior."[25.] There is evidence from studies conducted by Schaffer (1963) that a degree of sensitivity can exist for several months despite even longish separations. After six months, however, Bowlby states conditions for developing attachment become more and more complex. Fear responses in a human infant, like infants of other species, are aroused easily and with a great deal of strength.

Observations by Freedman (1961), Schaffer (1966) and Ainsworth (1967) reveal there are three phases an infant exhibits before he shows fear towards strangers. The first is a period of no visual discrimination between familiar and unfamiliar individuals. Then comes a phase of 6 to 10 weeks duration in which the infant responds positively towards strangers. Finally, at about 3 months the infant exhibits "intense visual concentration" and "passive discrimination"[26.] between familiar and unfamiliar individuals. After this discriminatory phase, and as early as 26 weeks (though 8 months is the average age), the infant exhibits overt discomfort and behavior typical of fear: orientation and withdrawal from

the stranger; crying, and frowning even at the sight of a stranger. Bowlby, in criticism of Rene Spitz's position that withdrawal from strangers is a form of separation anxiety, postulates three important points:[27] strangeness *per se* is a common cause of fear; an infant can discriminate the familiar from the unfamiliar before overt fear of strangers is evident; furthermore, fear of strangers is distinct from separation anxiety and can exist even with a mother present. Two conclusions have been proposed from studies of infants and strangers: the later the attachment, the later the development of fear (Freedman, 1961; Ainsworth, 1967); and, the more people an infant habitually encounters, the later the onset of fear (Schaffer, 1966).

The final point of discussion in attachment behavior is the development of goal-corrected behavior from a primitive, simple state to an elaborate and cognitively competent one. For the first three quarters of the first year, goal-corrected attachment behavior is not at all exhibited. Then, from 8 months to the first birthday, the child begins to discover what conditions provide security and relieve distress; consequently, he can organize behavior to a certain extent to achieve those conditions. In the second year the child develops a will of his own and begins in turn to develop a plan or goal or in Piaget's terms "intention" in order to change his partner's behavior. This task requires a "good deal of cognitive and model-building competence"[28]. Moreover, according to Piaget (1924), egocentrism, the inability to perceive things from another's point of view, greatly limits a child's cognitive equipment until the age of seven. However, once attachment behavior is organized in

goal-corrected terms, the relationship of child and mother becomes even more complex and the "individualities...partly merge."[29] (MacKay, 1964) How the child creates his internal world is of great importance in this process. After acquiring language, the child builds models of how his physical world, his mother, and significant individuals behave. This model in turn is the framework for bias perception and evaluation.

Some important research has indicated the importance of maternal attachment in the development of the child's behavior towards and exploration and perception of his environment. According to Lewis and Goldberg's study of perceptual-cognitive development in infancy, attentive maternal behavior stimulates within the infant an expectation that his behavior can influence the environment and this expectation motivates the infant to "produce and utilize behaviors and skills not reinforced in past experiences."[30] In addition, Rubenstein's and Ainsworth's studies of the correlation between maternal attentiveness and exploratory behavior in the infant indicated that a mother's attachment to her infant facilitates exploration and cognitive development. Attachment behavior, then, seems to play a vital role in a child's perception and analyzation of the world around him and in "the level and quality of exploratory behavior and play."[31] Moreover, studies by the Clarkes and by Spitz have demonstrated that without attachment or with impaired attachment between mother and child, the child is extremely vulnerable to retardation of mental and physical development, to a deficiency in the formation of close object relationships, and to an inability in achieving ego differentiation.[32] Attachment is essential, it appears,

to the development of a balanced, effective, vigorous individual who can form deep relationships and behave effectively within his environment.

III. PROCEDURES

Methodology Chronology:

1. Selection of Sample: 4 children were selected for the study.
2. Development of the Instrument from previous studies and from observations in the classrooms.
3. Collection of Data for each child.
4. Development of the Profile from a master tally sheet to determine the dominant categories and their characteristics.

1. Selection of Sample

Four children (2 boys and 2 girls) were selected for the study. They came from white American urban middle-class families. One child came from a divorced family. The centers the children attended espoused similar philosophies but were structurally different. One center was a nursery school with two teachers per class, the other center was a parent cooperative with one teacher for the group of children, and one parent assisting that teacher on a rotating basis.

Christopher, 5 years 3 months* was observed with 2 teachers at National Child Research Center, a nursery school in Washington, D.C. He came from a white middle-class family and was the oldest of two children. The second child had just been adopted 4 months prior to this study. Christopher related primarily to one teacher who was concerned with Christopher's relationship to his peers.

Patrick, 3 years 3 months* was observed with 2 teachers at National Child Research Center. He also came from a white middle-class urban family who returned to the United States from Germany 9 months prior to this study. Patrick spoke very little English when he came to school in September but by May had a fair vocabulary. A live-in caretaker from Germany frequently took Patrick to and from school. Patrick was the elder of two children, his brother being 2 years younger.

Kristin, 4 years 6 months* was observed with 1 teacher at All of Us, a cooperative in Washington, D.C. An only child she came from a white middle-class urban family of divorced parents, both of whom took an active role in their parenting for her. At the time of this study Kristin's mother was planning a remarriage. Kristin was noticeably upset by the divorce which took place when she was 3 years old and by the pending remarriage. The following conversation was recorded:

> I'm so mad. My Mom and Dad don't live together. I go back and forth. My Mom used to get angry with my Dad. And my Dad was angry too. I don't want to go to All of Us in the morning. I want to go to my Grandma. I like to go to my Grandma's but I don't like to drive there.

Alison, 2 years 11 months* was observed with 1 teacher at All of Us, a cooperative in Washington. The younger of 2 children (her sister is 5 years old) she came from a white middle-class urban family. She had experienced no crisis in her life at the time of the experiment and was a cheerful affectionate child.

2. Development of the Instrument

The instrument developed for this study was used for collecting data on the frequency of attachment of behaviors that occured between the four children and their teachers. Indices that were repeatedly agreed upon by several researchers to show attachment bonding are used in the instrument (Schaffer and Emerson, 1964; Ainsworth, 1964; Wolff, 1969; Bowlby, 1969). Pre-instrument observations that augmented the established list (i.e. talking with, sitting on lap, etc.) are included in the instrument as they result from the infant's

* Ages of the children at the onset of the study.

attachment indices. Indices not considered pertinent to the age of children observed were deleted from the list. Observations made in the classroom led to the addition of other indices. From the collection of these various indices, 3 primary categories that represented the dominant modes of expression of attachment behaviors could be established. These modes were vocal, physical and gestural. The specific indices were categorized within the dominant modes. [See Figures 1 & 2.]

The time element for each observation between teacher(s) and child was ten minutes with one minute check points. The name and age of the child was recorded along with the date of the observation, the location of the school and the activity the child was involved in.

3. Definition of Modes and Indices

All 3 modes - vocal, physical and gestural - are intimately related in the education of the young child to the process of communicating and relating. The range of each mode is wide in itself as is the range for each particular indice.

The Vocal Mode:

The vocal mode is the use of language or voiced expressions to convey feelings or ideas for the purpose of bringing the child and teacher into closer bonding. The vocal mode has, it would seem, more potential within the community of the classroom. A child can demand more attention that s/he seeks from the teacher compared with the more passive gestural mode or the physical mode which has to be by necessity on a one-to-one basis and therefore not always possible. The most sophisticated of the 3 modes, the vocal mode requires the use of the vocal chords in a variety of ways. Laughing and whining, basic and nonverbal ways of relating vocally, are at one end of the spectrum of vocal expression.

Verbalization, a sophisticated means of socialization requiring cognitive skills, is at the other.

The vocal mode Indices:

Crying for: loud appeal for the teacher that expresses unhappiness

Greeting: verbal expression aimed at initiating interaction with teacher

Whining: complaining crying aimed at avoiding separation

Calling to: verbally demanding presence of teacher; aimed at initiating interaction

Asking question/help: requiring attention of teacher in verbal way to initiate interaction

Initiating conversation: beginning, originating talk and interaction with teacher

Talking with: communicating, imparting, interacting, sharing words with teacher in a reciprocal way; aimed at sustaining interaction

Physical Mode

The physical mode is the manner of conveying attachment by use of the actual body in order to affirm and evaluate feelings. The basic building block in the process of attachment from which the gestural and vocal modes can grow, this mode would seem to involve more risk on the part of the child because it is more essentially related to feelings.

Indices:

Touching: having contact with part of body of teacher; aimed at initiating interaction

Embracing: enclosing in the arms of teacher as a sign of affection

aimed at sustaining interaction

Clinging: grasping, remaining in physical contact with teacher; aimed at avoiding separation

Leaning on: inclining body against teacher for support; aimed at initiating or sustaining interaction

Sitting on lap: being enfolded in teacher's seated body; aimed at sustaining interaction

Allowing self to be touched/held: permitting teacher to express physical sympathy toward child and sustain interaction

The Gestural Mode:

The gestural mode is the symbolic use of body movements to express feelings in order to communicate an intent to elicit a response from the teacher. It is the translation of motion into an understandable sign without resorting to physical touch. It is the starting of language.

Indices

Eye contact: meeting of child's eyes with teacher's in order to initiate interaction or stimulate it

Smiling at: pleasurable expression deliberately focused on the teacher in order to let the teacher know s/he is content; aimed at initiating or sustaining interaction

Physically following: moving after teacher, accompanying teacher; aimed at sustaining interaction or avoiding separation

Waving: hand expression of greeting or farewell directed toward the teacher

4. Collection of Data

The instrument was used each time a child was observed. Observations were ten minutes in length, and checkmarks were made in the appropriate time slots for any observed indice or indices of child attachment behavior toward the teacher(s). If no indices were noticed no recording was entered. At times several attachment behaviors occured simultaneously, in which case several checkmarks were entered on the tally sheet for the appropriate time.

Kirstin was observed 9 times for a total of 1 hour and 30 minutes.

Christopher was observed 9 times for a total of 1 hour and 30 minutes.

Alison was observed 9 times for a total of 1 hour and 30 minutes

Patrick was observed 8 times for a total of 1 hour and 20 minutes.

5. Development of Profile

The profile of attachment bonding was determined from a master tally sheet on which the indices for all 4 children were computed. From these computations the dominant categories were determined and the following characteristics were decided:

1. The dominant mode of attachment behavior for all 4 children was ascertained by totalling the observed counts of that mode and determining its percentage in relation to the total number of counts of the other 2 modes.

2. The dominant indice of attachment behavior for all 4 children was ascertained by totalling the observed counts of that indice and determining its percentage in relation to the total number of counts of all indices in all modes.

3. The dominant indice within each mode of attachment behavior for all 4 children was ascertained by totalling the observed counts of that indice and

determining its percentage in relation to the total number of counts for the indices in each mode.

4. The dominant mode of attachment behavior for each child was ascertained by computing the number and percentage of counts for that mode in relationship to the total number of counts of all three modes for each child.

5. The dominant indice of attachment behavior for each child was ascertained by computing the number and percentage of counts for that indice in relationship to the total number of counts for all the indices for each child.

IV. RESULTS

The profile of attachment behavior clearly shows the predominant expressions of attachment behavior the four children most frequently exhibited towards their teachers. (See Figures 2, 3, & 4). The largest of the three attachment modes for all four children is the vocal mode. It occured 117 times out of a total number of 299 counts of attachment behavior patterns or 39% of the total counts. The vocal mode for two of the four children acquired the highest percentage among the 3 dominant modes of attachment behavior. Nearly equalling the vocal mode, the gestural mode occured 115 times out of a total number of 299 counts of observed attachment behavior or 38%; and the physical mode was observed 67 times out of 299 counts or 22%.

The dominant indice for all 4 children was eye contact. It was recorded 84 times out of 115 total number of recorded indices in the gestural mode or 73% of the total number of counts in that mode. Sixty-five counts of talking with out of a total number of 117 recorded indices for the vocal mode or 56% of the total number of counts occured. Allowing self to be touched or held was observed 24 times out of 67 for the physical mode or 36% of the total number of counts in that mode.

Each child showed a particular dominant mode and indice of attachment behavior with the teachers. The children are listed in order of the frequency of their recorded attachment behaviors in comparison with the time they were observed.

1. Alison showed 104 counts of attachment behavior in 90 minutes or 1.15 counts per minute. Her dominant mode was gestural, recorded 34 out of 104 total counts or 33% of the total counts; her dominant indice was eye contact, recorded 25 times or 24% of the total counts.

2. Christopher showed 89 counts of attachment behavior in 90 minutes or .99 counts per minute. His dominant mode was physical, recorded 32 out of 89 counts or 36% of the total counts; his dominant indice was eye contact, recorded 25 times or 28% of the total counts.

3. Kirstin showed 58 counts of attachment behavior in 90 minutes or .64 counts per minute. Her dominant mode was vocal, recorded 34 out of 58 counts or 59% of the total counts; her dominant indice was talking with, recorded 25 times or 43% of the total counts.

4. Patrick showed 48 counts of attachment behavior in 80 minutes or .60 counts per minute. His dominant mode was vocal, recorded 22 counts out of 48 total counts or 46% of the total counts; his dominant indice was eye contact, recorded 15 times or 31% of the total counts.

It is worth noting some important aspects of the results. First, the vocal mode is dominant although eye contact from the gestural mode is the significant indice. Kristin's high count in the indice talking with obviously influenced the dominance of the vocal mode. Secondly, eye contact was the dominant indice for three of the four children, while the vocal mode was dominant for two of the four children. Thirdly, the physical mode was the least significant of the three modes receiving only 67 counts, while the gestural mode received 115 counts and the vocal mode received 117 counts. Fourthly, Christopher's scores were fairly evenly distributed among the three modes; Kristin's scores were definitely in favour of the vocal mode; and Patrick's and Alison's scores were irregularly divided among the three modes. Fifthly, one indice within each mode was not recorded at all: crying for in the vocal mode; clinging in the physical mode; and waving in the gestural mode.

V. DISCUSSION

In order to ascertain the qualities that make attachment indices an essential part of attachment behavior, the indices used in the instrument will be examined. Why an indice was or was not recorded and why some indices are predominant are to be considered in the discussion. Also important in the discussion is the significance of the infant's first use of each mode of expression as an archetype for attachment behavior in later years.

1. The Vocal Mode

Bowlby concluded from his studies that the infant's early concern with the human voice results from associating it with the appeasement of physiological needs. He also determined that when an infant's vocalizations were answered, the infant vocalized even more (Bowlby, 1969). An infant's early interaction with the human voice is part of the social stimulation reported in many studies to be an important factor influencing the development of attachment (Schaffer and Emerson, 1964; Ainsworth, Bell & Stayton, 1972; Yarrow and Pedersen, 1972; Bowlby, 1969). Its function is that of increasing and promoting social interaction between adult and child (hence, teacher and child) and maintaining them in proximity to each other. When social interaction between teacher and child repeatedly takes place, attachment bonds are strengthened. Vocal interaction is important in activating the attachment process, since "attachment is interactional in nature, affected by the continual interplay of qualities in both (individuals)" (Yarrow & Pedersen, 1972).[33] All the indices observed in the vocal mode either took place in conjunction with physical or gestural mode or were immediately followed by an indice or indices of those modes. Eye contact (an indice of the gestural mode) was the indice that occured most frequently in conjunction with the vocal mode. In a few

cases indices of the vocal mode were observed in isolation from other modes.

The three indices that repeatedly occured within the vocal mode of attachment behavior are talking with, initiating conversation, and asking question or help. They are listed in order of their frequency count, the indice with the highest frequency count discussed first. Each of these indices is at the end of the spectrum of vocal expression requiring a more complex means of socialization. A certain level of cognitive development is a prerequisite. Moreover, goal-oriented and corrected behavior, organized behavior by a child to achieve a goal, is an essential dimension of the attachment aspect of these indices.

a. Talking with

In this study it was observed that when a child talked with the teacher s/he interacted with the teacher in a verbal way. The child focused attention on an exchange of words and thus maintained social interaction with the teacher. The length of the conversation was observed to be brief or lengthy depending on the following factors: the child's ability to communicate verbally, or, the child's speech development; the child's "intention" (Bowlby, 1969) to influence the behavior of the attachment-figure, the teacher; and, most importantly, the child's trust in relating thoughts and feelings via words to the teacher. This trust, essential for the initiation of talking with, depends on the strength of the attachment bond developed between teacher and child or the intention to develop that bond. The teacher's sensitivity and ability to initiate conversation and to respond to the child seems to encourage or discourage further communication. At the same time, talking with promotes and intensifies the attachment bond through social interaction.

b. Initiating a conversation

A child initiating a conversation with a teacher intended to initiate a social interaction, and, consequently, increased and reinforced the attachment bond. At times the children chose only a few words - "look at my painting" - as an invitation to conversation. To maintain the conversation becomes contingent on the teacher's response to the child. The child, then, activated the attachment behavior of initiating a conversation in order to promote social interaction and thus affect and intensify attachment with the teacher.

c. Asking a question or help

Asking a question or help occured when a child asked a teacher a a question about a situation, an object, or another child; or asked for help in dealing with a problem that arose with a situation, an object, or another child. Like talking with a child's asking a question or asking for help appeared to be based upon an established trust in the relationship with a teacher. The child needed to have the knowledge that her/his problem would be considered by the teacher. This knowledge was necessarily contingent on previous experiences with the teacher that had been positive. Each time the child asked a question or asked for help, s/he activated the attachment processes.

Calling to, whining, greeting, and laughing are all indices in the vocal mode of attachment behavior that occured fairly infrequently among the four children. These indices are social signals that have less complexity of interaction than the three more predominant indices just discussed. They are, however, signaling behaviors, dependent on previously formed trust and the child's need for attachment. They are designed to increase the proximity of the teacher

to the child and thus mediate, strengthen and test the attachment bond.

d. Laughing

Laughing is an impulsive indice of attachment behavior. Usually a child laughs without either preconceived intentions or a plan to form attachment bonds. Laughing in this study occured spontaneously, yet, like to other secondary indices, served as a signal to others as well as generally acting as a catalyst to bring the child and teacher closer to some kind of interaction. Because of its impulsive and fairly primitive nature, often the only kind of vocal signal emitted by the very shy child is laughing. Laughing was observed only with the two youngest children, who had a more positive self-image than the older two children. It was also observed in conjunction with other indices in other modes.

e. Calling to

The child seeks out the teacher verbally for the purpose of establishing closer proximity between them. The closer the proximity between them, the more likely verbal and physical exchange will occur, and, as a consequence, social interchange. Calling to was infrequent, occuring when a child called for the teacher from across the room, once for help with a problem, another time to initiate an exchange of conversation. Calling to is a significant process that is a catalyst for further development of attachment between teacher and child.

f. Whining

Whining, also a signaling and proximity inducing behavior, was observed to occur when the child was under stress. Both counts were observed with the child of recently divorced parents who was verbalizing and showing a lot of anger and insecurity about herself. It was used by the child to bring the teacher into closer contact with her.

g. Greeting

Greeting was only observed once, partly because of the nature of the classroom (i.e. in the open classroom set-up, the teacher was not in a particular place to greet children but was interacting with the children who had already arrived), and partly because not all the observations took place at that time of day. Greeting took place when the observed child entered the room and singled out the teacher verbally as well as by making eye contact with her. The child wanted to reestablish contact with her as soon as he came into the class with the intent of furthering attachment bonds. Greeting then initiated other modes of interaction between teacher and child.

h. Crying for

Crying for was not observed in this study. It is an indice that shows intensity of attachment towards a figure. Results of this study's observations point out that teachers seldom experience intense behavior because of the subsidiary status of their relationship with children.

2. The Physical Mode

At first an infant relates to the environment and gains knowledge of that environment through touch. S/he also initiates the process of attachment through grasping or clinging, among several instinctive behaviors. Touch establishes an infant's initial interpersonal behavior. Sullivan speculates in The Interpersonal Theory of Psychiatry (1955) that there is "the need for contact" in infants that occurs in early infancy:

> The very young seem to have very genuine beginnings of purely human or interpersonal needs in the sense of requiring manipulations by and peripheral contact with the living, such as lying-against and so on. [35]

Furthermore, early childhood educators all acknowledge that a young child learns from the environment primarily through physically manipulating it. It appears

that a young child's chief mode of relating to an attachment figure would be, as with the infant, through touch and physical interaction. Yet is is apparent from the profile of this study that the physical mode of attachment behaviors has the least percentage of all the modes. Perhaps this is an indication of our culture's value of touch, of physical interaction between people.

Ernest Schachtel observes in a study of interpersonal relationships that the distance senses, sight and hearing, both phylogenetically and ontogenetically attain their full development later than the proximity senses, touch, taste, and smell.[36] Despite this fact, however, the proximity senses are neglected in western culture. (Montagu, 1971). Spitz (1957), concerned with the child's need for physical contact yet aware that our culture has pulled back from it, clearly stated the problem that exists.

> ...throughout the western world skin contact between mother and child has been progressively and artificially reduced in an attempted denial of the importance of mother-child relations.[37]

a. Allowing self to be touched or held

In contrast with the Schachtel theory, allowing self to be touched or held, which received 38% of the counts in the physical mode, figured only 8% of the total count of attachment behaviors. It is an indice that implies that a child accepts rather than activates attachment behavior. However, the child does initiate this behavior according to her/his actions or needs. Allowing self to be touched or held intensifies the attachment process in that the child permits her/himself to interrelate and interact with the teacher in a physical way. The positive interactional behavior between child and teacher will affect and promote the attachment process as has been discussed above. When a child allowed her/himself

to be touched or held by the teacher in this study, s/he allowed the teacher's arms to encircle her/him in a way that made her/him feel secure. There are several distinct reasons that the children observed in this study allowed a teacher to touch or hold them: to receive help in controlling impulses; to find solace during a moment of emotional stress; or to share love through physical closeness. Despite the diversity of reasons that have led to the actual behavior, holding encourages a physical interaction which promotes the attachment bonding between teacher and child.

b. Touching, leaning on and sitting on lap

Touching, leaning on and sitting on lap were indices that received approximately the same number of total counts in the physical mode. Each indice is initiated by the child and exhibits an active seeking of physical interaction with the teacher. Two of the four children were observed to touch the teacher by resting their hands on any accessible part of the teacher's body often looking at the teacher at the same time, seeking sensory communication, both visual and tactile. When a teacher was sitting, a child was observed to place her/his hands on the adult's shoulder. If a teacher was standing, a child touched the adult's leg with her/his hand. Three of the four children were observed to lean against the teacher (rather like Sullivan's infant "lying-against"), partial weight of their bodies supported by the teacher's body. All four children sat on the teacher's lap, sometimes at the request of the teacher, sometimes at their own initiative. Each of the indices observed were modes of behavior that sought proximity with the teacher through touch. Each time the child experienced the proximity of close physical interaction through touch, attachment was fostered and intensified.

c. Embracing

Embracing (the child and the teacher hugging each other) was recorded only once. It is, no doubt, a rare instance of very strong affective behavior and an intense moment of attachment. Universalistic in their relationship with the child, a teacher is also a secondary attachment figure (Bowlby, 1969) to the child and probably rarely the participator of an intense attachment with the child.

d. Clinging

Although Bowlby (1969) determined primarily from his studies in ethology clinging to be one of the instinctual attachment behaviors, it was not recorded at any time for the four children. Frequently evident in the first year, clinging, like crying, becomes perceptibly intense in the child during times of stress. The teacher, a substitutional but nevertheless subsidiary attachment figure experiences such intense behavior very infrequently.

Parallel to the pattern observed with the vocal mode, indices in the physical mode usually occured in conjunction with the vocal or gestural mode and rarely as isolated behaviors.

3. The Gestural Mode

The final mode of attachment indices are grouped together because the forms of behavior are neither vocal nor tactile; and, more importantly, because they each describe some kind of gesture intended to bring the child into closer contact with the adult. Interaction between the child and the attachment figure generates close contact between them. When children orient themselves toward the attachment figure, they can effect that close contact and thus direct their behavior towards the figure that will catalyze and intensify attachment.

All four children in the study were observed using body language (gestures) to communicate and interact with the teacher. Sometimes they gestured from some distance without using words; at other times those gestures were accompanied by verbal interaction and/or physical contact. The gestural mode attained the second highest percentage of attachment behavior and the eye contact indice scored the most amount of counts of all the attachment indices. Let us examine why.

Approximately three weeks after birth, infants engage in eye-to-eye contact with their human companions and cultivate intense gazing for periods of time during the fourth week. It is the baby's primary means of establishing visual rapport with the human.

> Once eye-to-eye contact becomes a significant factor in producing smiling...as soon as the eyes zero in on my eyes, the baby starts to grin...The child will search the face looking first at the hairline, then at the mouth and finally making contact with the eyes, at which point it will break into a grin (Wolff, 1963) [38]

Many studies have been made showing positive correlations between the visual stimuli of the human face and the response of smiling. (Wolff, 1963; Polak, Emde & Spitz, 1964; Piaget, 1936; Bowlby, 1969). If an infant is blind, the response of smiling occurs several months later then with a visually active infant (Freedman, 1964). Visual interaction contributes directly to social interaction extending itself to subsidiary figures through the child's attachment behavior.

a. Eye-contact

The four children observed in this study repeatedly made eye contact with their teachers. Occasionally eye contact occured spontaneously in a self-initiated manner from accross the room even when the child was in play, as though s/he were checking to see where the teacher was and what she was doing. Sometimes

eye contact was observed when the child heard the teacher and looked up from play in response to her voice. In both of these cases, it was the only mode of expression the child chose to use. At other times eye contact was seen in conjunction with physical or vocal interaction with the teacher. Often eye contact was very brief, perhaps only a few seconds; occasionally it was sustained for a few minutes, especially during a verbal exchange. In every case of this gestural behavior in which the child was seeking contact with the teacher, the visual could provide interaction with the adult even from a distance. Eye contact is a primitive, simple way of establishing interaction. Montagu (1971) calls it "the tactile quality of vision...in the touching of another with the eyes."[39] Ira Gordon referred to it in his studies of mothers and infants as gazing. The CDA teacher competency studies showed eye contact to be a significant factor in determining good teachers. It requires none of the complex dynamics or trust of verbal interaction. Nor does it require as does physical interaction boldness or trust. It can relay a need, provide a degree of assurance, and seek proximity. Its basic nature in its almost effortless manner of seeking contact is the reason for its repeated occurance. Certainly this would account for its dominance over alternative attachment indices.

b. Smiling

One of the first forms of social behavior advanced by the infant towards the primary attachment figure is smiling. This impulse has immediate effect on the mother's behavior, disarming her and rewarding and encouraging her efforts toward her baby (Bowlby, 1969). The same principle is true of the young children observed in this study. Their behavior demonstrates even more goal-orientation than that of infants. Smiling is a social release, the function of which increases

and sustains attachment interaction between the child and the attachment figure. Like eye contact, it is a primitive way of entering into social communication and thus reinforcing the attachment process.

The third most predominant indice of attachment behavior, smiling was always observed in conjunction with another mode of attachment behavior.. When the children communicated vocally with the teacher they enhanced the social interaction taking place by smiling. At other times it occured when the child related physically with the teacher and responded to the teacher's physical and verbal interaction by smiling. In either case the child's smiling served to reinforce and elaborate the attachment bonding process by encouraging the teacher's relations with the child and thus bringing the two into continued and closer interaction.

c. Physically following

As soon as the child is mobile, s/he uses approach or following behavior to bring the mother towards her/him and to keep the mother there with her/him. (Bowlby, 1969). Physically following is an indice of behavior that is goal-oriented. The child intends by its employment to make further contact with the adult for the purpose of elaborating on the attachment bonding process. In this study it was an indice observed with only one child. She used the behavior twice to create a closer proximity with the teacher in order to then relate verbally and physically. The third incident of following appeared to have proximity with the teacher as its sole intent.

d. Waving

Waving was the single indice of the gestural mode listed in the study that was not observed. Waving is a signaling behavior informing the attachment

figure of the child's recognition of a separation in their relationship. Almost no separations between child and teacher were observed.

It can be concluded that children in this study initiated attachment by many different types of behavior, the most dominant indices being talking with, initiating a conversation, and asking a question or help (the vocal mode), allowing self to be touched or held and touching (the physical mode), and eye contact and smiling (the gestural mode). In order for these forms of attachment behavior to be directed towards the attachment figure (the teacher), observations have shown that children orient themselves toward the teacher by smiling or using eye contact, and maintain proximity through touch and/or vocalization. Furthermore, children reinforce and elaborate their goal-oriented attachment bonds by means of social interchange and/or physical interaction.

CONCLUSIONS AND SUMMARY

Why do different children use some modes of attachment behavior more frequently than others? What factors influence the development and intensity of attachment behaviors? The children of this study exhibit different degrees of attachment to their teachers, each child having one distinct and predominant mode of relating. An analysis of these attachment behaviors is fairly straightforward, while a judgement of their intensity is more difficult to make. The intensity and consistency of attachment exhibited by the child toward the teacher seems to vary throughout the day and from day to day, a fact observed in other studies as well (Shaffer and Emerson, 1964). The length of time a single pattern of behavior persists can also vary. And with any increase of frequency and duration a variety and elaboration of attachment behaviors usually occurs. Both qualities, frequency and duration correlate with intensity. However, the intensity of attachment is not necessarily measured by the frequency of behavior. Furthermore, no objective measurement of intensity has been agreed upon. Bowlby does indicate some attachment behaviors to be more intense than others; however, the criteria for his observations are not demonstrably objective. No other recognized authorities in the area of attachment have used his criteria of intensity.

Were one to determine the total number of counts in comparison with the time observed (See Profile 2), the two children who exhibit the least attachment expressed their interaction by using the vocal mode. On the other hand, perhaps the children who express their relationship with the teacher in the vocal mode were also expressing a more intense though less frequently recorded quality of attachment behavior. That vocal expression of behavior was observed several times

in clusters of several minutes can be considered an indication of the involvement and depth of interaction and attachment of the child for the teacher. Whereas results showed more attachment in the physical and gestural modes but much less clustering.

Compatibility in the temperament and characteristics of child and teacher is a factor that can affect the formation and development of attachment (Yarrow, 1972). For example, if a child relates primarily through physical contact to a teacher accustomed to verbal communication, then some difficulty in establishing and nurturing attachment bonding between the will occur. Yarrow refers to it as the "fit" in his essays on mother and child. On the other hand, if the teacher responds to the child through touch, the child may learn and acquire that particular dynamic in her/his relationship with the teacher. Again children may bring from their relationships a particular bias in forming and developing attachment that the teacher may need to adjust to. The behavioral qualities in both the child, the teacher, and their relationship all interact as influences in the creation of attachment.

Perhaps even more important than compatibility is the child's capability and interest in seeking the teacher's responsiveness to her/his self. Ainsworth (1963) and Schaffer (1963) both were amazed by the initiative infants take in seeking interaction. An infant whose initiative is repeatedly denied experiences a reaction that can range from withdrawal to intense overt irritation. Thus no less important is the teacher's sensitivity to respond to the child's particular way of relating, even as a mother's sensitivy to her baby's signals are influential in establishing secure attachment. A teacher needs to recognize, interpret, and respond to those signals. In this way, the teacher will stimulate and reinforce attachment bonding between the two. A teacher's responsiveness to a child's

signals encourages a focus on and concern with the individual. If the teacher has a distinct and involved relationship with the child then s/he can be responsive to the child's signals and needs for attachment.

In order to further facilitate and nurture attachment bonding of the child and teacher, the teacher should go beyond merely responding to the child. During the observations made for this study, those cases where the teacher responded to the child's signals, and, in addition, interacted further, the child's efforts at initiating interaction were rewarded and stimulated. These completed responses provide a variety of ways for social stimulations and provide the opportunity for renewed initiation of attachment by the children. Moreover, the attachment process intensifies and deepens as a consequence of the teacher's provision of continued and varied stimulation. Although it is not quantified by this study, it was my positive impression that those teachers who stimulated further interaction with the children also increased an initiation of behaviors by the children.

Why do some children show more initiative than others in seeking attachment with the teacher? This is a complex question. Studies by Ainsworth (1964) and Schaffer and Emerson (1964) both show that the more insecure the child's attachment to the primary attachment figure, the more anxious that child is in developing attachments with others. In other words a need for attachment exists. A child whose primary attachment has been unpredictable and insecure may choose one of two ways to deal with the prospect of a secondary attachment figure (the teacher). S/he may choose to avoid interaction because previous associations have resulted in unsatisfactory relationships with the primary attachment figure. Or s/he may actively seek interaction to fill the void left by an unfulfilled relationship. Obviously, in actuality, relationships and motives for establishing or avoiding them are not as simply or clearly delineated. The

child who seeks to avoid a relationship may be drawn into interaction with the teacher by the adult's efforts to interact in a positive way with the child. Indeed the teacher could provide the child with a secure, predictable and intimate attachment and thus a model for future interactions with others. Another example of this complex of relationships is the child who runs away from the class. This abuse of the gestural mode by the child results in the detachment of child and teacher. But the extreme recourse to the gestural mode by the child may have been the result of repeated unfulfillment of vocal interaction. In the child's use of an inappropriate mode, the child has confirmed in action (detachment) what might not have been its original intent. Perhaps that child has had an insecure primary attachment and, as a consequence, s/he has not learned appropriate ways of signaling the teacher of her/his need. Perhaps at one time the child did use appropriate signals; however, as they were not responded to, s/he resorted to other means to signal the potential attachment figure of her/his needs. Intensity of mode generally underscores the child's need for the individual attention of the teacher in order to reinforce attachment bonding.

In juxtaposition to these examples of children with unsatisfactory primary attachments, a child who has enjoyed a secure initial primary attachment is inclined to seek a secure interaction and bonding with a secondary figure through appropriate behavior patterns. However, should that secondary figure (the teacher) be unresponsive to her/his signals, the child may become somewhat anxious and exhibit insecurity within the classroom. In order to activate attachment, the child may constantly attempt to initiate interaction with the teacher first in an appropriate way then probably an inappropriate way should her/his attempts prove futile. Or, after repeated unsuccessful attempts the child might withdraw from any interaction at all with the adult and seek out only her/his peers. She/he might

feel a sense of loss at the failure to establish a dynamic relationship with the adult.

The attachment bonding process between child and teacher is obviously a complex one. As Bowlby has stated: "Why one child responds one way and another another remains obscure."[40] Early and highly characteristic patterns are established with a primary attachment figure (David and Appell, 1969) with each new interaction and relationship providing an additional dimension. Both individuals (child and teacher) bring to the relationship a background of patterns; yet also a new and distinct interaction. An analysis of all the components of attachment behavior between the yound child and teacher has facilitated an understanding of how to encourage and reinforce attachment between the two. Yet, it is diffiuclt to make general statements by way of conclusion. One cannot ascertain that certain behaviors occur more with three year olds than with four year olds, at least according to the data gathered by this study. Each child had her/his own particular mode of relating that was separate from age. Nor can one conclude that attachment occurs at one particular time more than at another. Attachment behaviors appeared at a variety of times and for a variety of durations. It can be concluded, however, that attachment between teacher and child is highly individualized. David and Appel's studies document in an impressive way the uncommon variation in amount and kind of interaction that is seen when a series of couples are compared. Two children observed in this study with the same teacher exhibit distinct modes of attachment; one child prefering the <u>verbal mode</u>, the other child defering to the <u>gestural mode</u>.

What does seem important is the analysis of the components of attachment behavior. A more sensitive awareness of the behaviors results from an understanding of the process of attachment, an awareness that can lead to a manipulation of a

stronger affective and interactive relationship between child and teacher. Without the awareness, deficiencies of an interchange between the two will exist and an insecure, unknown and unexplored relationship will connect adult and child. Stable interactional patterns of attachment will necessarily result in a stable psyche in the school environment. As was initially proposed, it is this stability fostered by a secure attachment that makes it possible for a strong and positive affective, social, physical and cognitive development within the young child.

Age: Activity:

observation time	TIME
crying for	VOCAL
calling to	
whining	
greeting	
asking question or help	
initiating conversation	
talking with	
other	
touching	Figure 1 PHYSICAL
embracing	
clinging	
leaning on	
sitting on lap	
allowing self to be touched or held	
other	
eye contact	GESTURAL
smiling at	
physical following	
waving	
other	
	OTHER

A young child's dominant modes of expressing attachment behavior		VOCAL									
Individual indices reflecting attachment behavior patterns crying for, clinging and waving: not observed		crying for	calling to	whining	greeting	asking question or help	initiating conversation	talking with	laughing		
Christopher 5 years	NCRC nursery school		1		1	11	1	13			
9 observations/89 counts 1 hour 30 minutes	teacher a	27 counts						30%			
Patrick 3 years	NCRC nursery school						10	10	2		
8 observations/48 counts 1 hour 20 minutes	teacher b	22 counts						46%			
Alison 3 years	All of Us coop					1	10	17	6		
9 observations/104 counts 1 hour 30 minutes	teacher c	34 counts						33%			
Kristin 4 1/2 years	All of Us		1	2		5	1	25			
9 observations/58 counts 1 hour 30 minutes	teacher c	34 counts						59%			
4 month span 299 counts			2	2	1	17	22	65	8		
		117 counts						39%			

PHYSICAL							GESTURAL				
touching	embracing	clinging	leaning on	sitting on lap	allowing self to be touched or held		eye contact	smiling at	physical following	waving	
3			6	6	17		25	5			
32 counts 36%							30 counts 34%				
			1	2	3		15	5			
6 counts 12%							20 counts 42%				
13	1		8	2	3		25	15	3		
27 counts 26%							43 counts 41%				
				1	1		19	3			
2 counts 3%							22 counts 59%				
16	1		15	11	24		84	28	3		
67 counts 22%							115 counts 38%				

Profile

1. For all four children:

	order of frequency and dominance	number of counts in mode or indice/ total no. of counts	percentage of counts
mode	1. vocal	117/299 counts in 3 modes	39%
	2. gestural	115/299 " in 3 modes	38%
	3. physical	67/299 " in 3 modes	22%
indice	1. eye contact	84/115 " in gestural mode	73%
	2. talking with	65/117 " in verbal mode	56%
	3. allowing self to be touched/held	24/67 " in physical mode	36%

2. For individual children

	order of frequency and dominance	number of counts in mode or indice; total number of counts	percentage of counts
[illegible]e	1. Kristin - vocal	34/58 counts in 3 modes	59%
	2. Patrick - vocal	22/48 " " " "	46%
	3. Christopher - physical	32/89 " " " "	36%
	4. Alison - gestural	34/104 " " " "	33%
indice	1. Kristin - talking w/	25/58 counts in verbal mode	43%
	2. Patrick - eye contact	15/48 counts in gestural mode	31%
	3. Christopher - eye con.	25/89 " " "	28%
	4. Alison - eye contact	25/104 " " " "	24%

3. Order of Frequency of observed attachment behavior for each child

1. Alison	104 counts/90 minutes	1.15 counts per minute
2. Christopher	89 counts/90 minutes	.99 counts per minute
3. Kristin	58 counts/90 minutes	.64 counts per minute
4. Patrick	48 counts/80 minutes	.60 counts per minute

FOOTNOTES

[1] Bowlby, Attachment p. 211

[2] Caldwell, Child Development Research pp. 19-20

[3] Yarrow and Pedersen, The Young Child p.55

[4] Bowbly, Attachment p.374 Caldwell, Child Development Research p.20

[5] Bowlby, Attachment p. 218-220

[6] Ibid., p. 374

[7] Ibid., p. 364

[8] Ibid., p. 367

[9] Ibid., p. 366

[10] Ibid., p.373

[11] Yarrow and Pedersen, The Young Child p. 56

[12] Bowlby, Attachment p. 224

[13] Ibid., p. 194

[14] Ibid., p. 148-198

[15] Yarrow and Pedersen, The Young Child p. 57

[16] Ibid., p. 58

[17] Bowlby, Attachment p. 216

[18] Ibid., p. 315

[19] Ibid., p. 314

[20] Ibid., p. 342

[21] Ibid., p. 344

[22] Ibid., p. 345

[23] Ibid., p. 346

[24] Ibid., pp. 300-303

[25] Ibid., p. 322

26 Yarrow and Pedersen, The Young Child p. 60

27 Bowlby, Attachment p. 328

28 Ibid., p. 352

29 Ibid., p. 355

30 Lewis and Goldberg, ERIC ED 024-470

31 Ainsworth, ERIC ED 065-180

32 Prugh and Harlow, Deprivation of Maternal Care p. 21

33 Yarrow and Pedersen, Attachment and its Origins p. 310

34 Bowlby, Attachment p. 138, 351

35 Sullivan, The Interpersonal Theory of Psychiatry p. 40

36 Schachtel, Metamorphosis p. 145-146

37 Spitz, No and Yes p. 124

38 Wolff, Observations on the early development of smiling p. 131

39 Montagu, Touching p. 237

40 Bowlby, Separation p. 5

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